II. Amendments to the Claims:

This listing of claims replaces without prejudice all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-4 (Cancelled).

5. (Currently Amended) A method of equalizing a received ~~scrambled~~ block that when it was transmitted through a channel had a prefix, a payload, and a suffix that was not identical to its prefix, the ~~scrambled~~ received block having a received prefix, a received payload, and a received suffix, the method comprising the steps of:

determining a synthesized prefix of a synthesized block that would have been received if the transmitted suffix ~~of the scrambled block~~ had been identical to the transmitted prefix when the ~~scrambled~~ received block was transmitted;

forming the synthesized block from the synthesized prefix and the received ~~scrambled~~ block by replacing the received prefix ~~of the received scrambled block~~ with the synthesized prefix;

determining a discrete Fourier transform of the synthesized block to obtain a determined discrete Fourier transform;

performing a frequency domain equalization on the determined discrete Fourier transform; and

determining an inverse discrete Fourier transform of the result of the frequency domain equalization to obtain an estimate of the ~~scrambled~~ transmitted payload ~~that was transmitted~~.

6. (Currently Amended) The method of claim 5, wherein the transmitted prefix and the transmitted suffix ~~of the transmitted scrambled block~~ are known.

7. (Currently Amended) The method of claim 6, wherein the channel has a known channel response length and the transmitted prefix and transmitted suffix ~~of the transmitted scrambled block~~ have lengths at least equal to the channel response length.

8. (Currently Amended) The method of claim 7, wherein the transmitted prefix and transmitted suffix ~~of the transmitted scrambled block~~ each have the same length, which is equal to the channel response length.

9. (Currently Amended) The method of claim 8, wherein the ~~scrambled~~ received block when it was transmitted is represented by a sequence of data symbols and the synthesized prefix ~~of the synthetic block~~ is determined by sending a sequence of data symbols that represents the transmitted suffix ~~of the transmitted scrambled block~~ followed by a sequence of data symbols that represents the transmitted prefix ~~of the transmitted scrambled block~~ through a model of the channel and retaining the portion of the resulting sequence corresponding to the sequence of data symbols that represents the transmitted prefix as the synthesized prefix ~~of the synthetic block~~.

10. (Original) The method of claim 9, wherein the channel is modeled by an FIR filter.

11. (Currently Amended) A method of equalizing a received ~~scrambled~~ block that when it was transmitted through a channel had a prefix, a payload, and a suffix that was not identical to its prefix, the ~~scrambled~~ received block having a received prefix, a received payload, and a received suffix, the method comprising the steps of:

determining a synthesized payload of a synthesized block that would have been received if the transmitted suffix ~~of the scrambled block~~ had been identical to the transmitted prefix when the ~~scrambled~~ received block was transmitted;

forming the synthesized block from the synthesized payload and the received ~~scrambled~~ block by replacing the received payload ~~of the received scrambled block~~ with the synthesized prefix and removing the prefix of the received scrambled block;

determining a discrete Fourier transform of the synthesized block to obtain a determined discrete Fourier transform;

performing a frequency domain equalization on the determined discrete Fourier transform; and

determining an inverse discrete Fourier transform of the result of the frequency domain equalization to obtain an estimate of the ~~scrambled~~ transmitted payload ~~that was transmitted~~.

12. (Currently Amended) The method of claim 11, wherein the transmitted prefix and the transmitted suffix ~~of the transmitted scrambled block~~ are known.

13. (Currently Amended) The method of claim 12, wherein the channel has a known channel response length and the transmitted prefix and transmitted suffix ~~of the transmitted scrambled block~~ have lengths at least equal to the channel response length.

14. (Currently Amended) The method of claim 13, wherein the transmitted prefix and transmitted suffix ~~of the transmitted scrambled block~~ each have the same length, which is equal to the channel response length.

15. (Currently Amended) The method of claim 14, wherein the ~~scrambled~~ received block when it was transmitted is represented by a sequence of data symbols and the synthesized payload ~~of the synthetic block~~ is determined by:

forming, data symbol by data symbol, a difference sequence, each data symbol of which is a discrete data symbol of the sequence that represents the transmitted prefix ~~of the transmitted scrambled block~~ subtracted from the corresponding data symbol of the sequence that represents the transmitted suffix ~~of the transmitted scrambled block~~;

sending the difference sequence through a model of the channel to determine an output sequence; and

forming the synthesized payload ~~of the synthetic block~~ by adding, data symbol by data symbol, the output sequence to the sequence that represents the received payload ~~of the~~

~~received scrambled block~~ beginning with the first data symbol of each.

16. (Original) The method of claim 15, wherein the channel is modeled by an FIR filter.

17. (Currently Amended) A method of equalizing a received ~~scrambled~~ block that when it was transmitted through a channel had a prefix, a payload, and a suffix that was not identical to its prefix, the ~~scrambled~~ received block having a received prefix, a received payload, and a received suffix, the method comprising the steps of:

determining a synthesized suffix of a ~~synthetic~~ synthesized block that would have been received if the transmitted suffix ~~of the scrambled block~~ had been identical to the transmitted prefix when the ~~scrambled~~ received block was transmitted;

forming the synthesized block from the synthesized suffix and the received ~~scrambled~~ block by replacing the received suffix ~~of the received scrambled block~~ with the synthesized suffix and removing the prefix of the received scrambled block;

determining a discrete Fourier transform of the synthesized block to obtain a determined discrete Fourier transform;

performing a frequency domain equalization on the determined discrete Fourier transform; and

determining an inverse discrete Fourier transform of the result of the frequency domain equalization to obtain an estimate of the ~~scrambled~~ transmitted payload ~~that was transmitted~~.

18. (Currently Amended) The method of claim 17, wherein the transmitted prefix and the transmitted suffix ~~of the transmitted scrambled block~~ are known.

19. (Currently Amended) The method of claim 18, wherein the channel has a known channel response length and the transmitted prefix and transmitted suffix ~~of the transmitted scrambled block~~ have lengths at least equal to the channel response length.

20. (Currently Amended) The method of claim 19, wherein the transmitted prefix and transmitted suffix ~~of the transmitted scrambled block~~ each have the same length, which is equal to the channel response length.

21. (Currently Amended) The method of claim 20, wherein the ~~scrambled~~ received block when it was transmitted is represented by a sequence of data symbols and the synthesized suffix ~~of the synthetic block~~ is determined by:

forming, data symbol by data symbol, a difference sequence, each data symbol of which is a discrete data symbol of the sequence that represents the transmitted suffix ~~of the transmitted scrambled block~~ subtracted from the corresponding data symbol of the sequence that represents the transmitted prefix ~~of the transmitted scrambled block~~;

sending the difference sequence through a model of the channel to determine an output sequence; and

forming the synthesized suffix ~~of the synthetic block~~ by adding, data symbol by

data symbol, the output sequence to the sequence that represents the received suffix ~~of the received scrambled block~~ beginning with the first data symbol of each.

22. (Original) The method of claim 21, wherein the channel is modeled by an FIR filter.

Claim 23 (Cancelled).

24. (Currently Amended) A method of transmitting a payload through a channel to a receiver, comprising the steps of:

forming a block in which the transmitted payload is preceded in the block by a prefix and followed in the block by a transmitted suffix that is not identical to the transmitted prefix;

scrambling the block prior to transmission to form a scrambled block having a scrambled prefix, a scrambled payload, and a scrambled suffix not identical to the scrambled prefix;

transmitting the scrambled block through the channel to the receiver to obtain a received ~~scrambled~~ block having a received prefix, a received payload, and a received suffix; and

at the receiver,

equalizing the received ~~scrambled~~ block by determining a synthesized prefix of a ~~synthetic~~ synthesized block that would have been received if the scrambled suffix ~~of the scrambled block~~ had been identical to the scrambled prefix when the scrambled block was

transmitted, forming an intermediate block from the synthesized prefix and the received ~~scrambled~~ block by replacing the received prefix ~~of the received scrambled block~~ with the synthesized prefix, determining a discrete Fourier transform of the intermediate block to obtain a determined discrete Fourier transform, performing a frequency domain equalization on the determined discrete Fourier transform, and determining an inverse discrete Fourier transform of the result of the frequency domain equalization to obtain an estimate of the scrambled payload ~~that was transmitted~~; and

unscrambling the estimate of the scrambled payload to recover the transmitted ~~data~~ payload.

25. (Currently Amended) A method of transmitting a payload through a channel to a receiver, comprising the steps of:

forming a block in which the transmitted payload is preceded in the block by a transmitted prefix and followed in the block by a transmitted suffix that is not identical to the transmitted prefix;

scrambling the block prior to transmission to form a scrambled block having a scrambled prefix, a scrambled payload, and a scrambled suffix not identical to the scrambled prefix;

transmitting the scrambled block through the channel to the receiver to obtain a received ~~scrambled~~ block having a received prefix, a received payload, and a received suffix; and

at the receiver,

equalizing the received ~~scrambled~~ block by determining a synthesized payload of

a ~~synthetic~~ synthesized block that would have been received if the scrambled suffix ~~of the scrambled block~~ had been identical to the scrambled prefix when the scrambled block was transmitted, forming an intermediate block from the synthesized payload and the received ~~scrambled~~ block by replacing the received payload ~~of the received scrambled block~~ with the synthesized payload and removing the received prefix ~~of the received scrambled block~~, determining a discrete Fourier transform of the intermediate block to obtain a determined discrete Fourier transform, performing a frequency domain equalization on the determined discrete Fourier transform, and determining an inverse discrete Fourier transform of the result of the frequency domain equalization to obtain an estimate of the scrambled payload ~~that was transmitted~~; and

unscrambling the estimate of the scrambled payload to recover the transmitted ~~data~~ payload.

26. (Currently Amended) A method of transmitting a payload through a channel to a receiver, comprising the steps of:

forming a block in which the transmitted payload is preceded in the block by a transmitted prefix and followed in the block by a transmitted suffix that is not identical to the transmitted prefix;

scrambling the block prior to transmission to form a scrambled block having a scrambled prefix, a scrambled payload, and a scrambled suffix not identical to the scrambled prefix; transmitting the scrambled block through the channel to the receiver to obtain a received ~~scrambled~~ block having a received prefix, a received payload, and a received suffix; and

at the receiver,

equalizing the received ~~scrambled~~ block by determining a synthesized suffix of a ~~synthetic~~ synthesized block that would have been received if the scrambled suffix ~~of the scrambled block~~ had been identical to the scrambled prefix when the scrambled block was transmitted, forming an intermediate block from the synthesized suffix and the received ~~scrambled~~ block by replacing the received suffix ~~of the received scrambled block~~ with the synthesized suffix and removing the received prefix ~~of the received scrambled block~~, determining a discrete Fourier transform of the intermediate block to obtain a determined discrete Fourier transform, performing a frequency domain equalization on the determined discrete Fourier transform, and determining an inverse discrete Fourier transform of the result of the frequency domain equalization to obtain an estimate of the scrambled payload ~~that was transmitted~~; and

unscrambling the estimate of the scrambled payload to recover the transmitted ~~data~~ payload.

Claims 27-43 (Cancelled).

44. (Currently Amended) The method of claim 24, wherein the scrambled prefix and the scrambled suffix ~~of the transmitted scrambled block~~ are known.

45. (Currently Amended) The method of claim 44, wherein the channel has a known channel response length and the scrambled prefix and scrambled suffix ~~of the transmitted~~

~~scrambled block~~ have lengths at least equal to the channel response length.

46. (Currently Amended) The method of claim 45, wherein the scrambled prefix and scrambled suffix ~~of the transmitted scrambled block~~ each have the same length, which is equal to the channel response length.

47. (Currently Amended) The method of claim 25, wherein the scrambled prefix and the scrambled suffix ~~of the transmitted scrambled block~~ are known.

48. (Currently Amended) The method of claim 47, wherein the channel has a known channel response length and the scrambled prefix and scrambled suffix ~~of the transmitted scrambled block~~ have lengths at least equal to the channel response length.

49. (Currently Amended) The method of claim 48, wherein the scrambled prefix and scrambled suffix ~~of the transmitted scrambled block~~ each have the same length, which is equal to the channel response length.

50. (Currently Amended) The method of claim 26, wherein the scrambled prefix and the scrambled suffix ~~of the transmitted scrambled block~~ are known.

51. (Currently Amended) The method of claim 50, wherein the channel has a known channel response length and the scrambled prefix and scrambled suffix ~~of the transmitted~~

~~scrambled block~~ have lengths at least equal to the channel response length.

52. (Currently Amended) The method of claim 51, wherein the scrambled prefix and scrambled suffix ~~of the transmitted scrambled block~~ each have the same length, which is equal to the channel response length.